

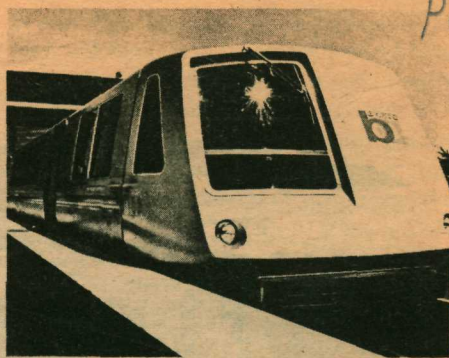
## bart extension project summary report

### Citizen Review

You are invited to attend the following public meetings to discuss this Summary Report:

Concord/Martinez  
Tuesday, May 14, 7:30 p.m. at  
Contra Costa County Water District  
20700 Concord Avenue

Pittsburg/Antioch/East County  
Wednesday, May 15, 7:30 p.m., at  
Antioch School Admin. Building  
510 "G" Street  
Antioch



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BART's early planning included rapid transit service to Pittsburg and Antioch as part of the overall system proposed for the Bay Area. As BART's 75-mile system nears full operation, attention is increased towards future extensions of BART to Pittsburg-Antioch and other areas of the BART District.

Planning for BART extensions and other forms of regional transportation is the responsibility of the Metropolitan Transportation

Commission (MTC), formed by the California Legislature in 1970 to plan, coordinate and guide transportation development in the Bay Area. The preparation, adoption, and maintenance of a "Regional Transportation Plan" as a continuous process is one of MTC's main purposes. In developing and maintaining its regional plan, MTC coordinates transportation planning efforts of local, state, and federal agencies, and distributes California Transportation Development Act

funds in the Bay Area.

MTC, BART, and the Cities of Pittsburg and Antioch entered into a joint-powers agreement in the fall of 1972 to study the implications of extending BART into a corridor from the present Concord BART station to Pittsburg and Antioch. Results of this study along with some thirty other transportation studies either planned or in progress in the nine-county Bay Area, will form the basis of the Regional Transportation Plan.

### Background

The Pittsburg-Antioch BART Extension Project (PAX) has been underway for several months, during which time various reports have been produced by the Project Staff, Advisory Committees, and Consultants. These reports, approved by the Board of Control established by the joint-powers agreement to guide PAX, are as follows:

#### Issues Report

(December 19, 1972) posing the problems and questions to be addressed.

#### Evaluation Criteria Report

(March 16, 1973) describing methods and criteria for evaluating BART extension alternatives.

#### Identification of Routes and Stations Report & Extension-Growth Alternatives Memorandum

(March 6 and May 2, 1973) identifying seven alternative BART extensions and their associated corridor growth patterns.

#### Evaluation of Extension-Growth Alternatives Memorandum

(July 9, 1973) evaluating these alternatives and providing the information leading to the Board of Control's decision on September 19, 1973 to adopt two extension alternatives for further planning.

The preparation of this report has been financed in part through a grant from the U.S. Department of Transportation, Urban Mass Transportation Administration, under the Urban Mass Transportation Act of 1964, as amended.

### Sponsored by:

Metropolitan Transportation Commission  
Bay Area Rapid Transit District  
Cities of Pittsburg and Antioch

### Board of Control:

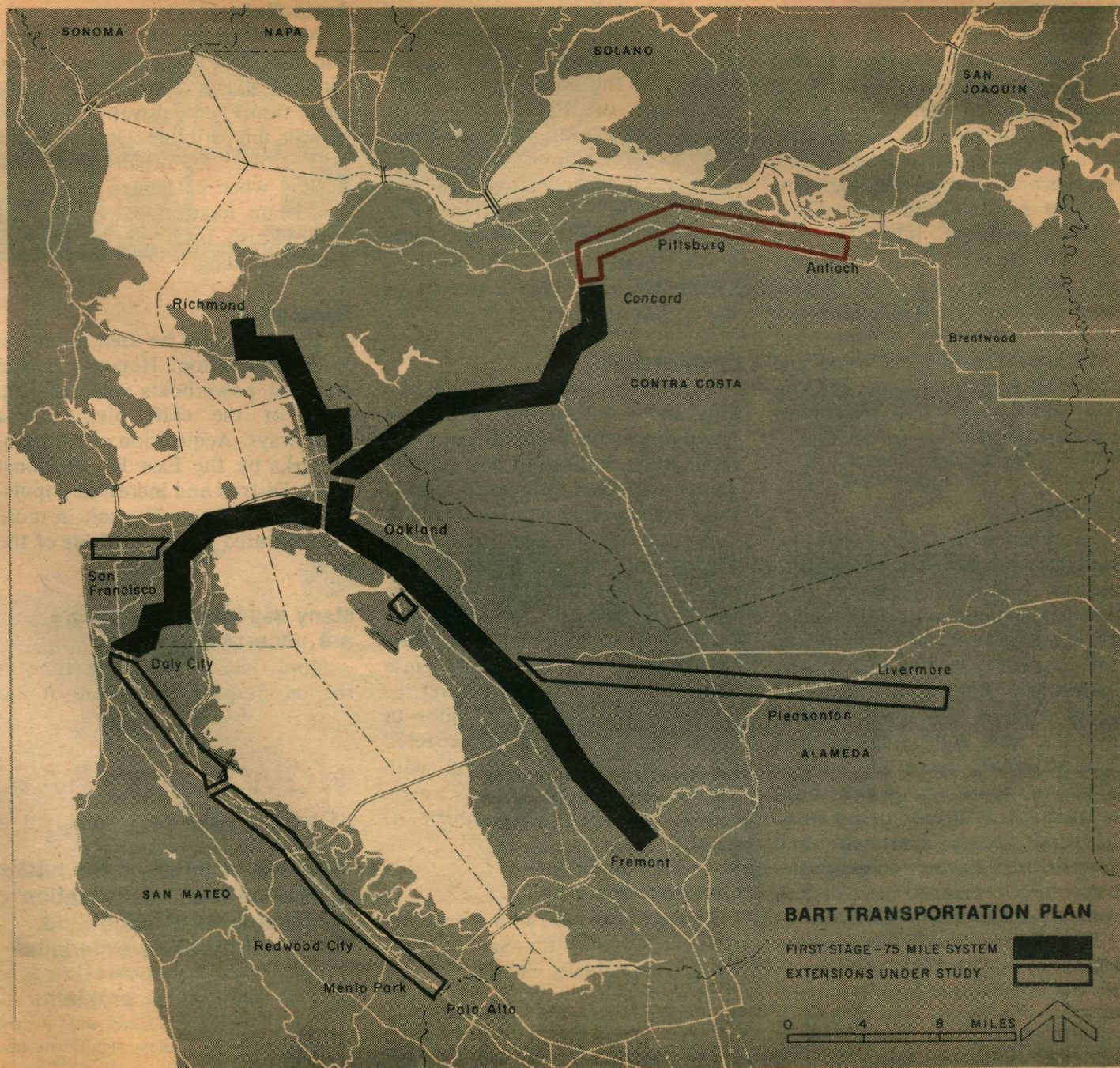
Nello J. Bianco, *Chairman*  
William M. Reedy  
George M. Silliman  
Dana Murdock  
(*Bay Area Rapid Transit District*)  
Earl MacIntyre  
James Kenny  
Joseph Bort  
(*Metropolitan Transportation Commission*)  
Joseph Barraco (*City of Pittsburg*)  
Barney Parsons, (*City of Antioch*)

### Project Staff:

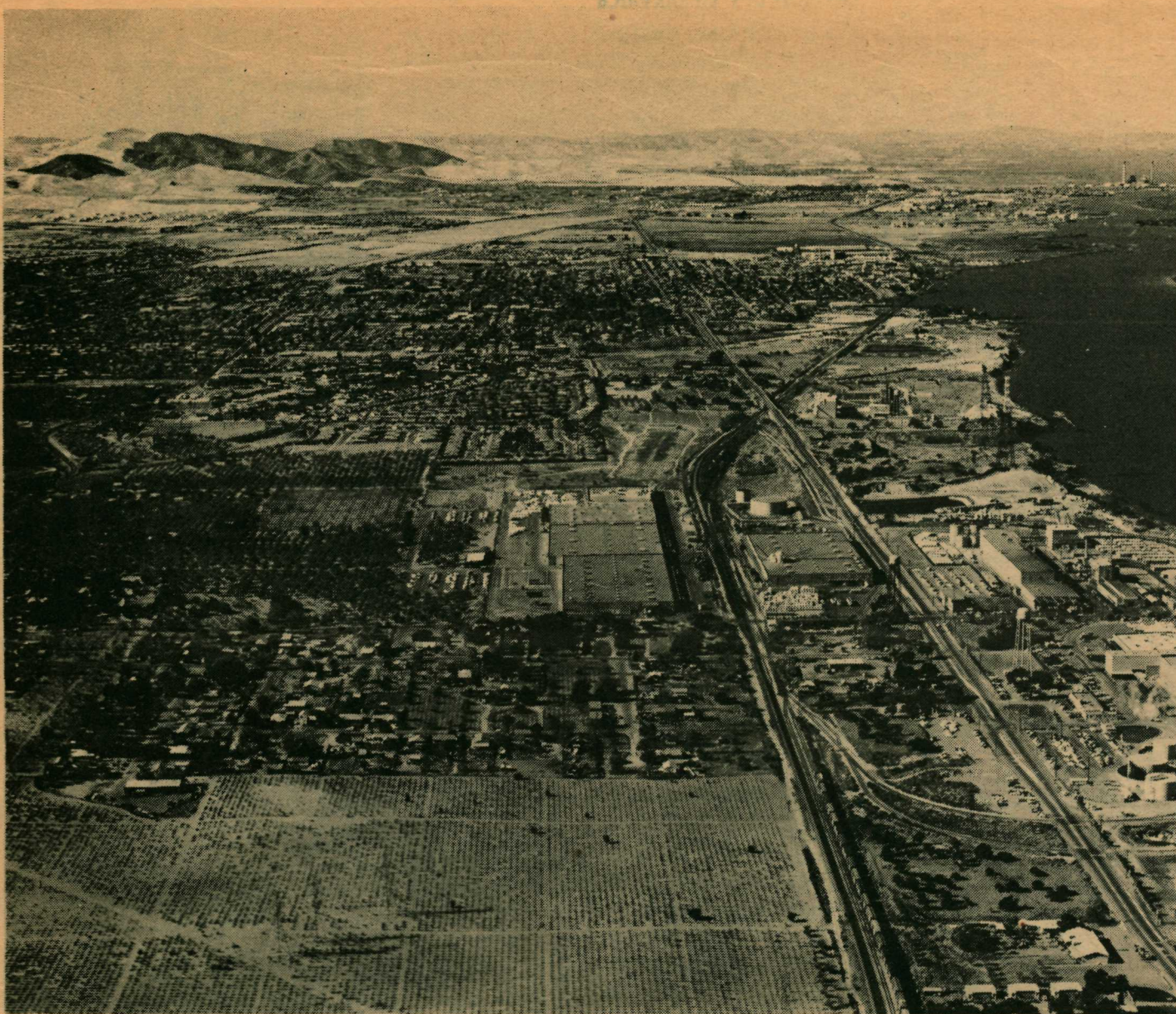
W. F. Hein, *Project Director*  
C. Mathews, *Project Coordinator*

### Consultants:

Parsons Brinckerhoff-Tudor-Bechtel  
in association with  
Wilbur Smith and Associates  
Ingmire/Patri  
Tallie B. Maule, A.I.A.







This report provides information applicable in answering questions on the Pittsburg-Antioch BART extension, and in evaluating the two extension and growth alternatives adopted by the Board of Control:

**What is the area's future?**

**How can BART be a part of the area's future?**

**What are the alternatives?**

**How do the alternatives compare?**

**What are the next steps?**

The information contained herein should be used in selecting one extension and growth alternative for conceptual design and comparison with the option of not extending BART.

## WHAT IS THE AREA'S FUTURE?

### **The area will grow and change significantly**

Design and construction of a BART extension will take seven years or longer; realization of such an extension will provide BART service to central and eastern Contra Costa County for decades. Thus, an extension must be planned for the future, by which time the area will have grown and changed significantly.

Changes likely to occur by 1990 in the corridor that would be served by the extension were part of the project study. Trends of growth could be substantially determined by today's corridor characteristics, resistance to change through government programs and regulations, private property interests, land resource characteristics, and people's established attitudes toward their community and environment.

Without a BART extension and if present trends continue, the corridor will generally have the following characteristics —

### **Housing**

Suburban homes will extend far back into the hills east of Concord and in southern Martinez. Less expensive subdivisions will occupy the flat plain south of Pittsburg and Antioch, and also the area around Oakley and Brentwood. Scattered large-lot homes will spread further into the now rural areas of East County. Nearly twice the number of existing apartments will be built on small lots in already urban areas, although some apartment and townhouse cluster communities may be developed in eastern Concord and southern Martinez.

While new middle and upper income housing is being developed, the older areas of West Pittsburg, Pittsburg, Antioch and Concord will continue to deteriorate. These

areas will continue to provide low income housing, much of it substandard, except where renewal programs and apartment replacements of older homes occur.

### **Population**

As many as 350,000 people (compared to 211,266 — 1970 Census) could live in the corridor by 1990. Good home buys and recreational opportunities in nearby rural areas and the Delta will attract many moderate and upper income families to the suburban communities south of State Route 4. A sizable population of blue-collar workers, unemployed and retired people, ethnic minorities, and low-income households will continue to live in the older communities to the north. Social separation is likely to widen between these segments of the corridor population.

### **Employment**

Moderate increases in industrial jobs and a substantial increase in population-service employment (i.e. retail trade, education and government) will offset declines in agricultural employment and could add as many as 20,000 jobs (to current 59,000 jobs as of 1970) in the corridor by 1990. This would be nearly 50,000 jobs short of the total needed to employ workers living in the area, and would cause almost half of the labor force to commute outside the corridor to work. Unemployment is expected to be at least six percent, with larger concentrations of unemployed workers living north of SR-4.

### **Commerce**

Industry in the area bordering Suisun Bay and the San Joaquin River will gradually expand through a process of facility development and intensified use of industrial land. A potential market of \$940

million in annual retail sales (est. in 1970 dollars) will be created if corridor population continues to grow at the present rate. Although much of the market would be served by Sun Valley Mall, downtown Concord, and Walnut Creek, there is a likelihood of some commercial sales increase in the corridor. Sales in downtown Pittsburg and Antioch will continue to decline unless a concerted effort is made to revitalize downtown business areas.

### **Agriculture**

Agriculture in the East County will decline as increased costs and reduced yields continue to make small farms and cultivation of poorer soils unprofitable. Grazing in the hills closer to urban areas will decline when cattlemen are unable to sustain losses due to increasing costs, brush fires, dog packs, and trail-bike riding.

### **Recreation**

The Delta will be used intensively for recreation. Houseboats and trailered powerboats will make up most of the craft plying Delta waterways. Acquisition of additional parks by the East Bay Regional Parks District and increased population in the area will result in more concentrated recreational use of the hills.

### **Many aspects of the future are uncertain**

More than at any other time in the recent past, the future of the

area is uncertain. Dramatic shifts in trends have been caused by a sluggish economy, the energy shortage, state and federal laws regulating land use, air quality and water quality, and changes in people's attitudes and lifestyles.

In the long run, the nation's economy and capability to increase available energy will necessitate patterns of growth and means of transportation that conserve energy resources. Locally, it will become increasingly difficult to afford the price of maintaining a suburban lifestyle.

It could be harder and more expensive to travel by automobile. Resistance to tax increases for funding roads, sewers, schools and other urban services will make it more difficult for governments to provide these necessities to sprawled growth, which is inefficient-to-serve. Area residents and governments are likely to be increasingly concerned about maintaining the environmental quality of their communities and preserving rural land.

In the last few months, the combined effect of these factors has been to slow the growth of new housing, industry, and commerce, while increasing the rate of unemployment and decline of the older portions of Concord, Pittsburg and Antioch. The permanence of these effects remains to be seen.

## HOW CAN BART BE A PART OF THE AREA'S FUTURE?

**Whatever happens in the future, without public transportation improvements of some kind, the area will likely experience a variety of transportation and environmental problems**

Overall travel demand will nearly double by 1990. Unless significant im-

provements to public transportation are made, the choice will be between decreased mobility or experiencing the variety of problems that are associated with continuing almost total reliance on the automobile.

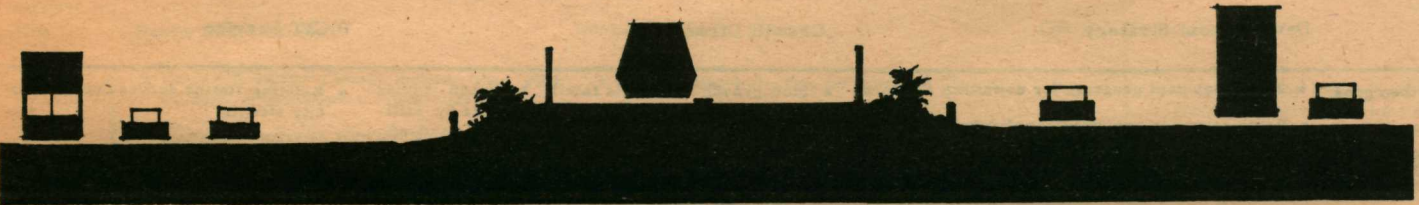
The many people living in the corridor who are unable to travel by automobile need public transportation now. As an



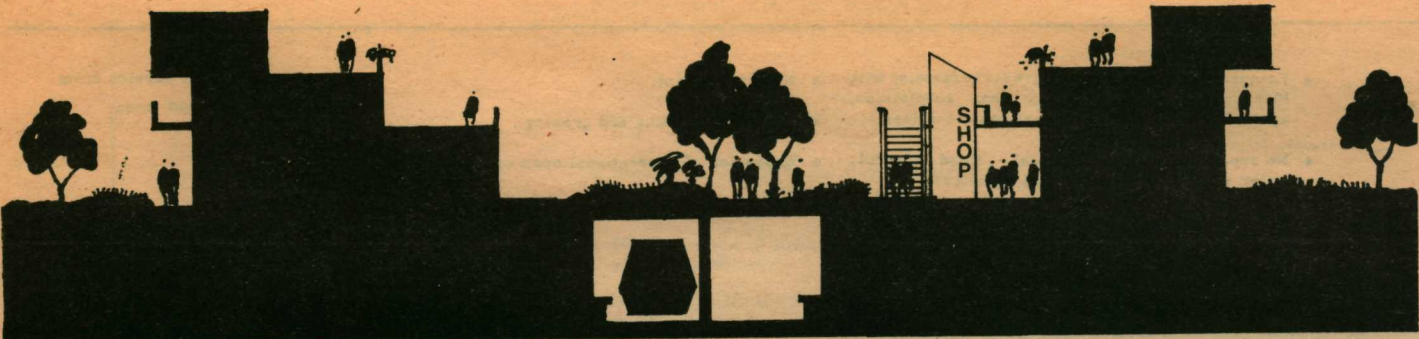
# A BART alignment into the Pittsburg - Antioch corridor would consist of any combination of these 3 configurations



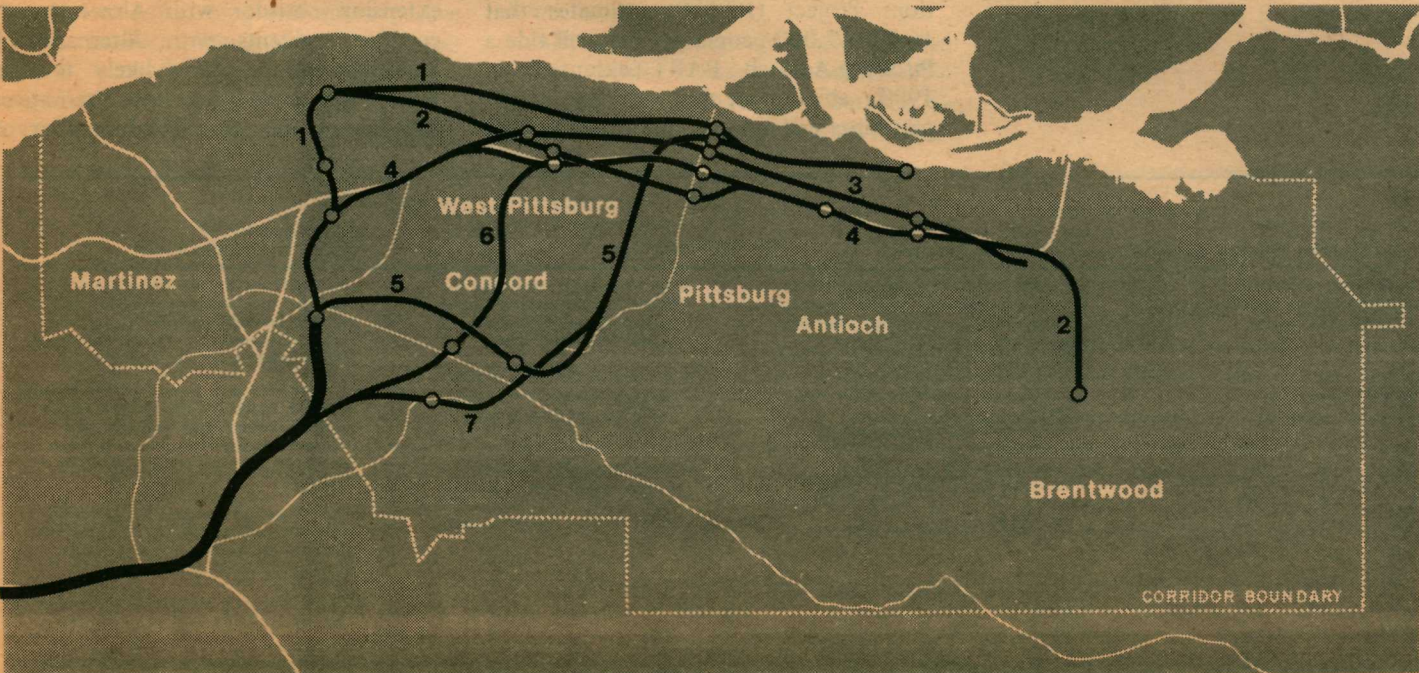
Aerial



Freeway Median



Subway



automobile becomes more expensive to own and operate, an increasing number of low-income residents will become totally dependent on public transportation.

The direction of growth and change that the corridor should take is best determined by local, county, and regional plans. An action program to guide growth can then be initiated, including modifications to zoning and subdivision ordinances, coordinating BART with public capital improvement programs.

## BART can have an important role in guiding the area's future

A BART extension into the Pittsburg-Antioch corridor would be a major improvement in public transportation; it would provide better regional transportation service and would significantly influence growth and change in the service area. Depending on how the extension is designed and located, and on what programs of land use control and public investment are implemented along with the extension, BART can guide change in the corridor in substantially different directions.

However, BART's growth shaping potential will be lost if the extension is not part of a coordinated planning effort. The coordinated action program must be pre-committed to begin before the extension is constructed, so that the considerable growth stimulated by the anticipation of BART does not occur in a pattern that conflicts with BART's service capabilities and growth-shaping objectives.

BART's growth-shaping potential is significant, but it is further important in that how the area grows and changes will determine who will live there in the future and whether or not future residents will ride BART.

## WHAT ARE THE ALTERNATIVES?

Seven BART extension alternatives were developed for providing service to the Pittsburg-Antioch area and East County. Five of the alternatives extend BART from the existing Concord station, and two alternatives extend BART from a wye junction south of the Concord station. Four of the alternatives serve North Concord and Martinez en route to Pittsburg-Antioch.

The seven alternatives were evaluated according to their community impacts, development and redevelopment potential; environmental impacts; transportation service; and right-of-way, construction and operations characteristics. Using this information, the Advisory Committees and the Board of Control adopted Alternative 1 modified and Alternative 4 for further evaluation.

### 7 ALTERNATIVE BART EXTENSION ROUTES

LEGEND

EXISTING BART CONCORD LINE

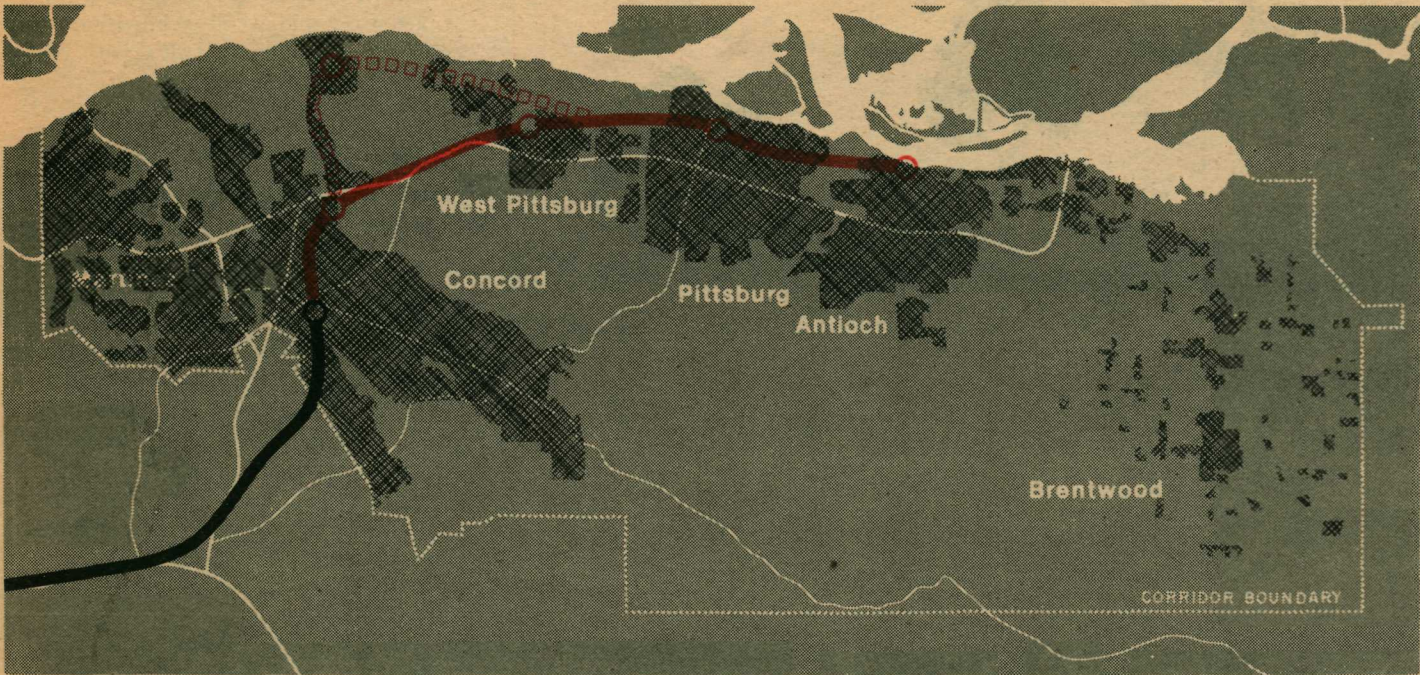
BART EXTENSION ROUTES & STATIONS



WHAT ARE THE ALTERNATIVES?

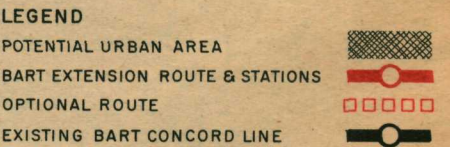
The two alternatives evaluated in this report each combine a BART extension route and set of stations with a program of coordinated actions including: zoning and subdivision regulations, redevelopment programs, public works and serv-

ices, and other governmental actions bearing on change in the corridor. The alternatives represent significant choices for the area's future, with each alternative having a different program of action.



ALTERNATIVE

This BART extension would follow a routing from the downtown Concord station to a station in North Concord and would follow the freeway over Willow Pass to stations in West Pittsburg, downtown Pittsburg and downtown Antioch. Optional routing would follow through the U.S. Navy Weapons Station between Port Chicago Highway West and Port Chicago Highway East, and would provide the opportunity for a station in a new community, port or recreational area in Port Chicago if the Weapons Station is abandoned prior to construction of the extension.



Corridor Area	Route and Stations	Development Strategy	Growth Direction	BART Service
Concord/ Clayton	<ul style="list-style-type: none"><li>Route follows Port Chicago Highway and then goes along SR-4 over Willow Pass.</li><li>Station located on Port Chicago Highway 2 miles north of downtown Concord.</li><li>Optional routing if U.S. Navy abandons Weapons Station follows Port Chicago Highway through Clyde and Port Chicago.</li><li>Optional route station in Port Chicago area.</li></ul>	<ul style="list-style-type: none"><li>Redevelopment program for downtown Concord.</li><li>Restrictions on new residential development in eastern Concord/Clayton.</li><li>Provide additional public works and services in eastern Concord/Clayton only to serve already committed growth.</li><li>Preserve hills, Lime Ridge and U.S. Navy lands in open space.</li><li>Develop new activity center in Port Chicago area if U.S. Navy relinquishes Weapons Station.</li></ul>	<ul style="list-style-type: none"><li>Slow growth of single family suburban homes and substantial increase of apartments by infilling and replacement of older areas of Concord.</li><li>Intensification of commercial areas by more concentrated shopping and office construction.</li><li>Slowed growth in eastern Concord/Clayton; no absorption of rural land.</li></ul>	<ul style="list-style-type: none"><li>Existing station serves Concord via city streets.</li><li>Local bus system provides 10-minute rush hour service to station area.</li><li>North Concord station serves northern and central Martinez via SR-4;</li></ul>
Pittsburg/ Antioch	<ul style="list-style-type: none"><li>Route follows SNRR through Pittsburg and ATSF through Antioch.</li><li>Station located on 8th St. near Railroad Avenue in Pittsburg.</li><li>Terminal Station located in downtown Antioch.</li><li>West Pittsburg station</li></ul>	<ul style="list-style-type: none"><li>Redevelopment and restoration programs for downtowns of Pittsburg-Antioch, including public and private investment.</li><li>Urban limit line around existing urban area; restrictions on residential development outside limit line and program to preserve existing open space.</li><li>Provide additional public works and services only to urban area.</li><li>Do not reconstruct SR-4 east of Bailey Road.</li><li>Develop marinas and water-oriented recreation facilities.</li></ul>	<ul style="list-style-type: none"><li>No growth of residential areas south of SR-4; apartment growth around downtowns.</li><li>Growth of general shopping/new office buildings in downtowns.</li><li>Expansion of marinas/restaurants and specialty shopping.</li><li>Industry modernization and growth on existing industrial sites.</li><li>Continued grazing and farming of open space areas.</li></ul>	<ul style="list-style-type: none"><li>Service to low-moderate income families and apartment dwellers in older areas of Pittsburg-Antioch.</li><li>Stations emphasize feeder bus and kiss-ride service from suburban areas of SR-4.</li><li>Convenient by walking or feeder bus to employment locations of people arriving by BART.</li></ul>
East of Antioch	NONE	<ul style="list-style-type: none"><li>Comprehensive program to preserve farming with 10-acre minimum lot size, no new subdivision, agricultural land assembly and tax incentives.</li><li>No expansion of waste disposal, flood control, water supply, power and road systems.</li><li>Public purchase of open space not used for farming.</li></ul>	<ul style="list-style-type: none"><li>No development.</li><li>Continued farming and grazing.</li><li>Expansion of recreational open space.</li></ul>	<ul style="list-style-type: none"><li>Local feeder bus service from Oakley-Brentwood area.</li></ul>

HOW DO THE ALTERNATIVES COMPARE?

The two alternatives were evaluated according to their patronage and transportation service, community impacts, development and redevelopment poten-

tial, environmental impacts, and right-of-way, construction and operations characteristics. The following is a summary of key findings.

PATRONAGE

The Regional Transit Travel Projections Project (RTTPP) estimates that 16,000-17,000 people per day will ride a Pittsburg-Antioch BART extension in 1990, about one-sixth of the 1990 patronage estimate for all of the Concord

Line. Although more people live in the extension corridor with Alternative 4, corridor residents with Alternative 1 modified will be more likely to ride BART. The result is that both alternatives have about the same total number of

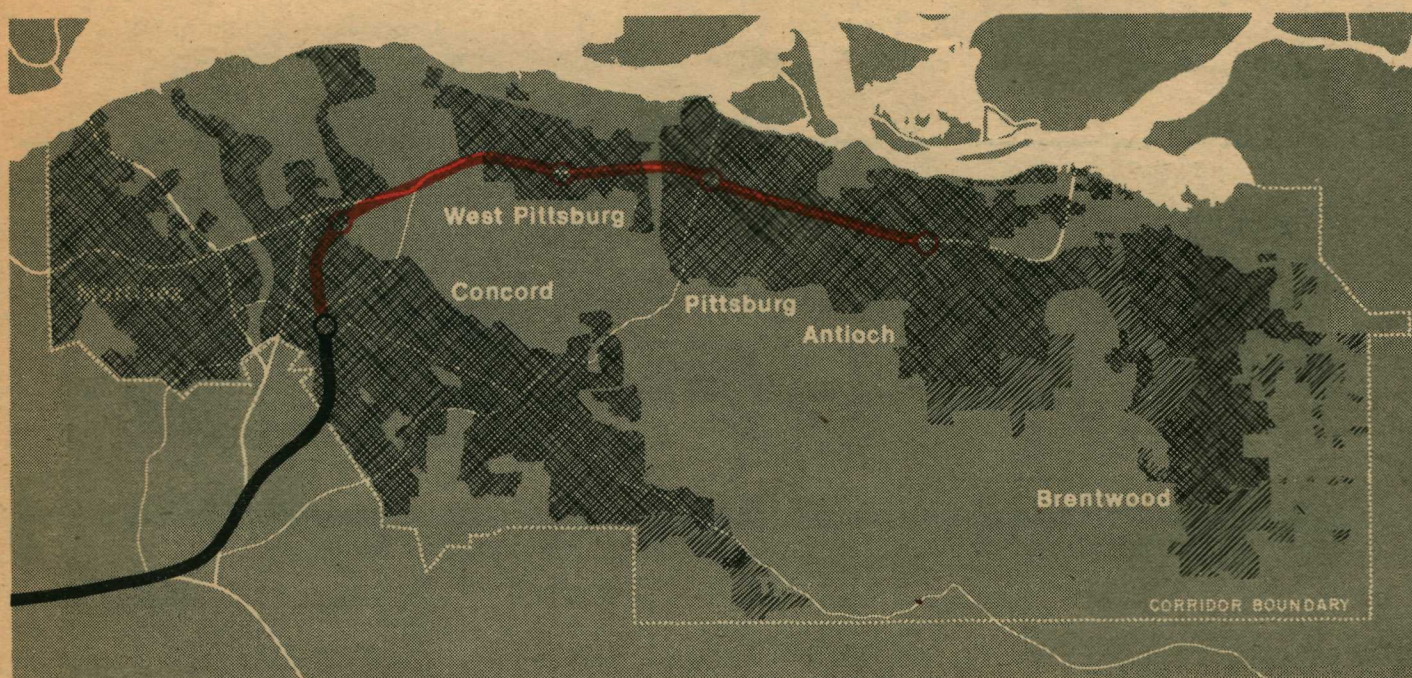
PATRONAGE <sup>(1)</sup>				STATION ACCESS		POPULATION/ACTIVITIES SERVED	RELATIONSHIP TO OTHER TRANSPORTATION
STATIONS	Work Trips	Non-Work Trips <sup>(2)</sup>	All Trips	Parking	Potential Bus/Walk-in		
Antioch	By Corridor Residents 7,800 By Others <sup>(3)</sup> 300	3,300 200	11,100 500	400 cars	70% of trips	Station generated traffic is moderate. Good street access via several routes if planned downtown street improvements are made.	Stations more convenient to major concentrations of public transportation dependent population in corridor.
Pittsburg	By Corridor Residents 6,300 By Others 300	4,400 500	10,700 800	500 cars	50% of trips	Station generated traffic is moderate. Good street access via Railroad Ave. and Harbor if planned improvements are made.	Stations in Pittsburg-Antioch close to shopping, community facilities and employment areas.
West Pittsburg	By Corridor Residents 2,900 By Others 100	2,100 100	5,000 200	--	60% of trips	Station generated traffic is light. Street access must be developed from Willow Pass Rd. to station site.	Stations are 2-5 minutes longer travel time by automobile from suburban areas south of SR-4 than Alternative 4 stations.
North Concord	By Corridor Residents 3,000 By Others 300	1,700 300	4,700 600	500 cars	30% of trips	Station generated traffic is light. Good street access via SR-4 and Port Chicago Highway.	Station locations in Pittsburg-Antioch good for local feeder bus routes to provide in-community public transportation to shopping, services, industrial job locations and other activities.
Total Extension	By Corridor Residents 20,000 By Others 1,000	11,500 1,100	31,500 2,100	1,400 cars	N.A.	N.A.	Antioch station is potential transfer point between BART and Bay Area Stockton rail connection being studied by the Sacramento-Stockton-Bay Area Transportation Corridor Study (SSBATCS) or Amtrak.
Concord	By Corridor Residents 15,200 By Others 400	10,300 1,900	25,500 2,300	Existing	50% of trips	Station generated traffic is moderate-heavy. Routes to station through downtown Concord will be heavily travelled.	West Pittsburg station is potential transfer point between SSBATCS "BART continuation" to Sacramento and BART Pittsburg-Antioch line. North Concord station provides for feeder bus service from Northern Martinez. Bus Express Service will be provided.

(1) Patronage estimates from RTTPP, Task III, Tests 2 and 3. Patronage is one-way trips.  
(2) Includes a small number of non-homebased work trips.



## 4

## ALTERNATIVE



This BART extension would follow a routing from the downtown Concord station to a station in North Concord and would then follow a widened SR-4 over Willow Pass to stations along the freeway in West Pittsburg, Pittsburg and Antioch.

## LEGEND

POTENTIAL URBAN AREA

SCATTERED DEVELOPMENT

BART EXTENSION ROUTE &amp; STATIONS

EXISTING BART CONCORD LINE



Corridor Area	Route and Stations	Development Strategy	Growth Direction	BART Service
Concord/Clayton	<ul style="list-style-type: none"> <li>Route follows Port Chicago Highway, then goes along SR-4 median over Willow Pass.</li> <li>Station is located on Port Chicago Highway two miles north of downtown Concord.</li> </ul>	<ul style="list-style-type: none"> <li>Redevelopment program for downtown Concord.</li> <li>Restrictions on new residential development in eastern Concord/Clayton.</li> <li>Provide additional public works and services in eastern Concord/Clayton only to serve already committed growth.</li> <li>Preserve hills, Lime Ridge and U.S. Navy lands in open space.</li> <li>Develop new activity center in headquarters area if U.S. Navy relinquishes Weapons Station.</li> </ul>	<ul style="list-style-type: none"> <li>Slow growth of single family suburban homes and substantial increase of apartments by infilling and replacement of older areas of Concord.</li> <li>Intensification of commercial areas by more concentrated shopping and office construction.</li> <li>Slowed growth in eastern Concord/Clayton; no absorption of rural land.</li> </ul>	<ul style="list-style-type: none"> <li>Existing station.</li> <li>Local bus system provides 20-minute rush hour service to station area.</li> <li>North Concord station serves northern and central Martinez via SR-4.</li> </ul>
Pittsburg	<ul style="list-style-type: none"> <li>Route continues in SR-4 median.</li> <li>Station at Bailey Road interchange.</li> <li>Station at Railroad Avenue interchange.</li> <li>Terminal station in Antioch at A Street.</li> <li>West Pittsburg station</li> </ul>	<ul style="list-style-type: none"> <li>Restoration and replacement program for older areas of West Pittsburg, Pittsburg and Antioch.</li> <li>Provide more social services to declining areas of Pittsburg-Antioch.</li> <li>Maintain existing apartment zoning in West Pittsburg and encourage high density development.</li> <li>Plan for single family zoning and subdivision south of SR-4.</li> <li>Expand public works and services to serve new development.</li> <li>Reconstruct SR-4 to 8 lanes through Antioch.</li> </ul>	<ul style="list-style-type: none"> <li>Gradual deterioration of neighborhood conditions and commercial sales in older parts of Pittsburg-Antioch.</li> <li>Growth of apartments and commercial center in West Pittsburg.</li> <li>Some apartment developments around stations in Pittsburg and Antioch.</li> <li>Substantial suburban growth and land absorption south of SR-4.</li> <li>Several new commercial centers; expansion of East County.</li> </ul>	<ul style="list-style-type: none"> <li>Automobile access and parking via improved bus arterials, walk-in from surrounding ment areas.</li> <li>Some service to low-moderate income families and apartment dwellers in older areas of Antioch and Pittsburg.</li> <li>Limited service to industrial job locations people arriving by BART.</li> <li>Local bus system provides 20-minute rush hour service to station area.</li> </ul>
East of Antioch	NONE	<ul style="list-style-type: none"> <li>Rezons East County for suburban residential development, allow minor subdivision of small holdings; planned unit development for larger lots.</li> <li>Extensive public works and services expansion.</li> <li>Extensive drainage and flood protection projects.</li> <li>Public purchase of land for parks, schools, and community centers.</li> <li>Establish urban services by annexation or incorporation.</li> </ul>	<ul style="list-style-type: none"> <li>Substantial suburban growth in East County.</li> <li>Disappearance of farming and grazing; extensive land absorption in both flat and hilly areas.</li> <li>Several new commercial centers.</li> </ul>	<ul style="list-style-type: none"> <li>Automobile access and parking via major new road system in East County.</li> <li>Service to predominantly commuter suburban families.</li> <li>Commuter express bus from Oakley-Brentwood area.</li> </ul>

## 4

## ALTERNATIVE

riders. Alternative 1 modified will carry more non-work trips and more people from elsewhere commuting into the corridor to work. Alternative 4 will carry more people living in the corridor and working elsewhere in the Bay Area, par-

ticularly in downtown San Francisco and downtown Oakland.

Alternative 1 modified locates stations where transfer connections are possible between BART Amtrak service to Stockton or new high-speed public trans-

portation to Sacramento. The patronage of this alternative will increase if these connections are made.

STATIONS		PATRONAGE <sup>(1)</sup>			STATION ACCESS			POPULATION/ACTIVITIES SERVED	RELATIONSHIP TO OTHER TRANSPORTATION
		Work Trips	Non-Work Trips <sup>(2)</sup>	All Trips	Parking	Potential Bus	Walk-in		
Antioch	By Corridor Residents	11,500	4,000	15,500	1,500 cars	30% of trips		Stations away from most public transportation dependent population in corridor.	Requires rebuilding SR-4 from Port Chicago Highway East and "A" Street interchange in Antioch.
	By Others	200	100	300					
Pittsburg	By Corridor Residents	5,100	3,900	9,000	600 cars	30% of trips		Stations away from major job locations and community facilities except Pittsburg City Hall/High School complex.	Station locations inappropriate for transfer points between SSBATCS alternatives and BART.
	By Others	400	400	800					
West Pittsburg	By Corridor Residents	1,600	900	2,500	400 cars	40% of trips		Stations convenient by automobile from suburban areas south of SR-4 and east of Antioch.	North Concord station provides for feeder bus service from Northern Martinez.
	By Others	100	100	200					
North Concord	By Corridor Residents	2,100	1,500	3,600	400 cars	25% of trips			Bus Express Service will be provided.
	By Others	400	100	500					
Total Extension	By Corridor Residents	20,300	10,300	30,600	2,900 cars	N.A.	N.A.		
	By Others	1,100	700	1,800					
Concord	By Corridor Residents	15,800	7,600	23,400	Existing	40% of trips		Station traffic is heavy.	
	By Others	400	1,400	1,800				Routes to station will be congested by 1990.	

(1) Does not include trips attracted to corridor stations produced by other corridor stations (intra-corridor trips).

NOTE: Patronage figures for Alternative 4 will be reduced slightly due to increase of headways in downtown San Francisco.



COMMUNITY IMPACTS

ALTERNATIVE 1 (continued)

Both alternatives will require the relocation of homes, businesses, and community facilities to provide for the BART right-of-way. Alternative 4 necessitates relocating at least 225-235 homes, 140,000 square feet of commercial activity, and several community facilities; nearly five times the direct impact on

housing and three times the direct commercial impact of Alternative 1 modified. The indirect impact of Alternative 1 modified will be to increase property values and rents in downtown Pittsburg and downtown Antioch. Unless the redevelopment program associated with Alternative 1 modified provides for low-cost

RELOCATION IMPACTS			NOISE / PRIVACY IMPACTS			
HOUSING	JOB COMMERCIAL	OTHER	NOISE		PRIVACY	COMMUNITY SEPARATION
<u>Direct Relocation</u> o 40-45 Houses o 14 Apartments, if Antioch Station provides Parking	<u>Direct Relocation</u> o 5 Retail Businesses (45,000 sq. ft., 55-60 jobs) o 1 Storage Building (can be moved on existing site)	o 100' Strip through Grammar School Administration Land (Presently Vacant)	<u>Activities</u>	<u>Distance from BART</u> 100' 200' 300' 500'	<u>Viewed from BART</u>	<u>COMMUNITY SEPARATION</u> o North Concord: Visual reinforcing of existing separation North Concord community by SNRR & Port Chicago Highway. o West Pittsburg (R.R.): East of McAvoy Road, a pedestrian and visual barrier reinforces the existing railroads separating West Pittsburg from the proposed open space area north of the community (see Pittsburg General Plan). o Pittsburg (SNRR): If aerial, visual separation between the old downtown area and rest of the community. If subway: none. o Antioch (AT&SPRR): BART Station will provide at-grade pedestrian and car overcrossing the railroad from downtown to the proposed Marina (see local plans, goals and policies statement); remove existing separation.
<u>Indirect Impacts</u> o Likely Increase Rents and Housing Values in North Pittsburg and North Antioch (Low Income and Fixed Income Areas) o Likely Increase Housing Costs in Fixed Income Areas North Concord	<u>Indirect Impacts</u> o Likely Decline of Marginal Businesses in North Pittsburg and Antioch o Slight Decline Agricultural Jobs		Houses	225-240 415-500 775-820 1450-1500	290-310	
			Apartments	14-20 50-65 90-115 170-200	30-40	
			Schools	1 1 1		
			Parks	1		
			Hospitals		1	
			Others	4		

DEVELOPMENT & REDEVELOPMENT POTENTIAL

Alternative 1 modified could contribute significantly to the redevelopment of downtown Pittsburg and Antioch while allowing for conservation of rural lands in East County provided a strict adherence is applied to zoning and subdivision controls. This general direction of development and redevelopment is in

conformance with both local and county plans, but is neither consistent with zoning in some areas nor with the pattern of development which has been occurring. This alternative provides the best opportunity for joint uses of BART stations and rights-of-way (e.g. parks, trails, bicycle paths, day care centers) and in

CONFORMANCE WITH PLANS/GOALS	DIRECT IMPACTS	INDIRECT IMPACTS			
	JOINT USE	COMMUNITY ACTIVITIES	POPULATION	EMPLOYMENT	LAND USE CHARACTERISTICS PUBLIC WORKS & SERVICE REQUIREMENTS
o Concord: In conformance with Concord & Martinez Plans Goals. o Pittsburg: Consistent with Waterfront Development, Revitalized Downtown, Medium Density Zoning, Open Space Element. o Antioch: Supports Marina-Revitalized Downtown. o East County: Conforms with Conservation & Open Space Element Now Under Consideration.	o Recreational & Social Services o Recreational & Social Services o Joint Use of Right-of-Way in Pittsburg and Antioch.	Within 1/4 Mile: 1 Elementary School 1 Municipal Golf Course Antioch City Hall 1 School Administration Building Recreation Pier Within 1/2 Mile: 1 Junior High School Pittsburg City Park Antioch Municipal Court Antioch Senior Citizens Center Pittsburg Waterfront	o Moderate increase in population over trend growth, significant influx of moderate income households in older areas of Concord, Pittsburg and Antioch. o Low and fixed income families will continue to live in older areas of corridor only if there are specific programs to provide low cost housing. o Majority of population must be attracted to higher density mixed community lifestyle.	o Concentrates job increase in existing commercial areas. o Slow decline in agricultural employment. o Moderate increase in net out-commute of resident labor force.	o Concentrates land uses in already urban areas. o Potential for new community port or recreation facility if U.S. Navy abandons Weapons Station. o Moderate

ENVIRONMENTAL IMPACTS

The direct impacts of the BART line and support facilities on the natural environment are moderate. Alternative 4 will stimulate new growth into rural areas that may cause considerable and irreparable damage to the natural environment. These impacts could affect 134 square miles of land

with valuable biological resources, agricultural and water resources, or visual and recreational resources. In addition, nearly 80 square miles of hazard areas subject to slope failure, high seismic response, fire and flooding will jeopardize the new growth stimulated by Alternative 4. Many of the impact areas are overlapping.

LINE & YARD IMPACTS	Critical Wildlife Habitats	Critical Plant Commun.	Slope Hazards	Seismic Hazards	Fire Hazards	Flood Hazards	Agricultural and Water Resources	Visual and Recreation Resources
Reinforces Existing Impacts	1.44	.68	.04	4.24	N.A.	2.46	5.26	2.46
Creates New Impacts	1.12	.72	--	.83	N.A.	.63	2.84	2.54
Scattered	Relatively Minimal							
Dense	Relatively Minimal							

RIGHT-OF-WAY, CONSTRUCTION AND OPERATIONS

Construction cost is approximately the same for both alternatives. The cost of Alternative 1 modified, including cost of rights-of-way, construction of all facilities, additional BART vehicles required by the extension, and contingencies and management is \$137 million (est. in 1973 dollars). Comparable costs for Alternative

4 are \$143 million; however, the cost of reconstructing SR-4 to fit BART into the median is \$42-48 million. Thus, the combined cost of constructing the joint BART-highway corridor envisioned by Alternative 4 is \$185-191 million. The combined costs of BART, the highway and any other regional transportation

Construction Cost (1)	Minimum Train Headways Peak Hour (Minutes)	Vehicles Required Trains Req'd On Line	Vehicles Required Vehicles Req'd On Line (3)	Additional Vehicles Required Vehicles Req'd with Spares (4)	Net Increase
\$137 (2)	6	24	172	191	29

(1) All costs in Millions of 1973 dollars; excludes: interest, inflation and financial charges, and cost of pre-operation and testing.  
(2) Subway construction through City of Pittsburg, add \$18 Million.



housing, such housing will be adversely affected by these increases. Alternative 4 will accelerate the decline of residential areas north of SR-4, thereby increasing the supply of substandard low-cost housing in the corridor.

Noise impacts and loss of privacy to views from passing trains due to BART

are comparable for both alternatives. Alternative 1 modified will be a more visible separation of the community in West Pittsburg and Pittsburg if the downtown alignment is on an aerial structure.

RELOCATION IMPACTS			NOISE / PRIVACY IMPACTS			
HOUSING	JOBS COMMERCE	OTHER	NOISE		PRIVACY	COMMUNITY SEPARATION
<b>Direct Relocation</b> o 135-140 Houses o 90-95 Apartments  <b>Indirect Impacts</b> o Likely Increase Housing Costs in North Concord  o None in Pittsburg-Antioch	<b>Direct Relocation</b> o 6 Retail Businesses, 110,000 sq. ft., 130-140 Employees o 1 Heavy Commercial Business, 22,000 sq. ft., 15-20 Empl. o 1 Wholesale Business, 4,000 sq. ft., 2 Empl. o 1 Warehouse in Construction  <b>Indirect Impacts</b> o Slight in Urban Areas o Substantial Decline Agricultural Jobs	o 100' Strip through Grammar School Administration Land (Presently Vacant) o 200' Strip Northside of Ambrose Park o Water Company o 100' Strip of Los Medanos School Playground o 200' Strip of John Marsh School Playground o 2 Churches, Elks Club	Activities	Distance from BART 100' 200' 300' 500'	Viewed from BART	o North Concord: Visual reinforcing of existing separation North Concord Community by SNRR & Port Chicago Highway. o West Pittsburg (Freeway): BART and expanded SR-4 reinforce the existing barrier that separates the community from the hills. o Pittsburg & Antioch (Freeway): BART and expanded SR-4 reinforce existing separation North & South Communities.
			Houses	195-205 470-485 800-820 1400-1450	260-280	
			Apartments	20 70 112 200-210	50-60	
			Schools	1 2 1		
			Parks			
			Hospitals		1	

developing clusters of community facilities and businesses within walking distance of BART.

Alternative 4 would stimulate overall population growth in the area and encourage the spread of new development to the south and east of the existing urban area. This general direction of

development conflicts with the preliminary plans of Pittsburg, Antioch and the County, although it continues the pattern of development which occurred until late 1973. This alternative provides little opportunity for the aforementioned joint use or clustering facilities within walking distance of the BART stations.

CONFORMANCE WITH PLANS	GOALS	DIRECT IMPACTS	INDIRECT IMPACTS	LAND USE CHARACTERISTICS	PUBLIC WORKS & SERVICE REQUIREMENTS
		JOINT USE	COMMUNITY ACTIVITIES	POPULATION	EMPLOYMENT
• Concord: In Conformance with Concord & Martinez Plans Goals.	• None	1/4 Mile	3 Schools Creative Art Auditorium	• Substantial increase in population, significant influx of higher income families into suburban areas south of SR-4 and East County.	• Dispersed population serving businesses spread job increase, job increase does not match predominate white collar skills of resident labor force.
• West Pittsburg: Inconsistent with Open Space Element.	• None	1/2 Mile	5 Schools 2 Parks Pittsburg Civic Center & City Park	• Decline of older areas of Pittsburg and Antioch provides low cost housing for low and fixed income households.	• Substantial decline in agricultural employment.
• Pittsburg: Inconsistent with Most Planning Intentions; Consistent with Current Zoning.	• None		County Administrative Building Community Hospital Teen Center	• Majority of population must still prefer spread suburban community lifestyle.	• Substantial increase in net out-commute.
• Antioch: Inconsistent with Preliminary Downtown Plan.	• None				• Extensive

Provided zoning, subdivision controls, limitation of urban services expansion, and other government actions that are part of Alternative 1 modified are strictly adhered to, this alternative has few adverse impacts on the natural environment since it redirects new growth away from rural lands and back into existing urban

areas. If a commitment is not made to these governmental actions, Alternative 1 modified will have significantly greater environmental impacts, but still not nearly as serious as with Alternative 4.

Linear miles of LINE & YARD IMPACTS	Critical Wildlife Habitats	Critical Plant Commun.	Slope Hazards	Seismic Hazards	Fire Hazards	Flood Hazards	Agricultural and Water Resources	Visual and Recreation Resources
Reinforces Existing Impacts	4.72	.44	2.78	2.48	N.A.	.51	12.90	5.57
Creates New Impacts	--	--	.06	.11	N.A.	--	.13	.26
Square Miles of GROWTH IMPACTS								
Scattered	.82	5.89	.56	.01	0	5.76	17.50	23.47
Dense	13.98 <sup>(*)</sup>	6.84	4.26	62.23	0	6.46	21.42	44.21

(\*) Example: 13.98 square miles of dense development would affect critical wildlife with Alternative 4.

projects in the corridor will be considered by MTC when allocating regional transportation funds to the various parts of the Bay Area.

Vehicle requirements, frequency of service and other operating characteristics are comparable for the two alternatives.

Construction Cost <sup>(1)</sup>	Minimum Train Headways Peak Hour (Minutes)	Vehicles Required Trains Req'd On Line	Vehicles Required Vehicles Req'd On Line <sup>(3)</sup>	Additional Vehicles Required Vehicles Req'd with Spares <sup>(4)</sup>	Net Increase
143 <sup>(5)</sup>	6	24	186	207	45

(3) 147 on-line vehicles required for service to Concord in 1990 without extension.

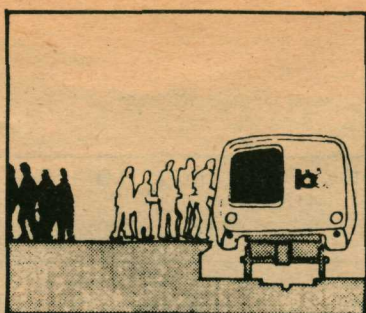
(4) 162 vehicles required including spares without extension.

(5) Associated with Alternative 4 are additional freeway improvement costs of \$42-48 Million.

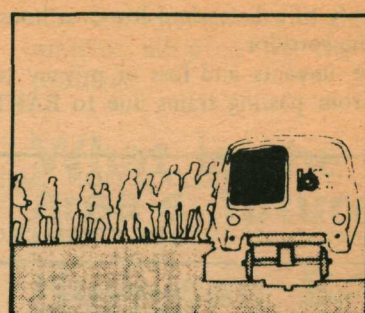


# HOW DO THE ALTERNATIVES COMPARE?

## Patronage

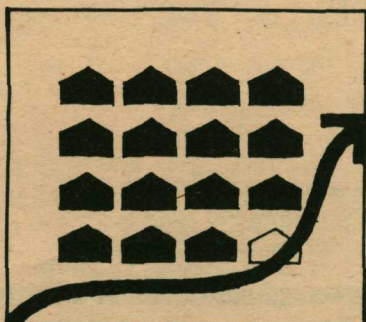


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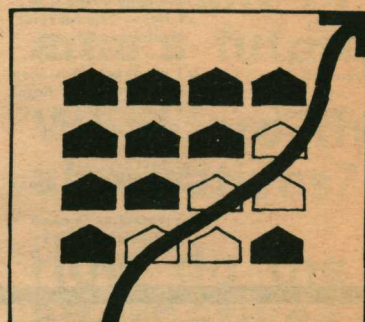


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## Community Impacts

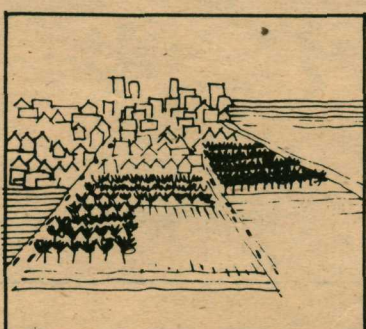


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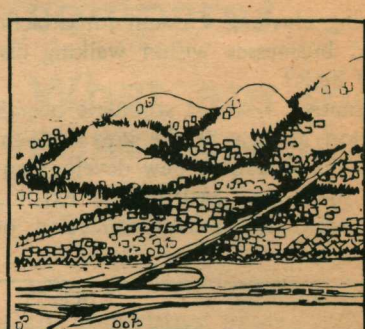


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## Development & Redevelopment Potential

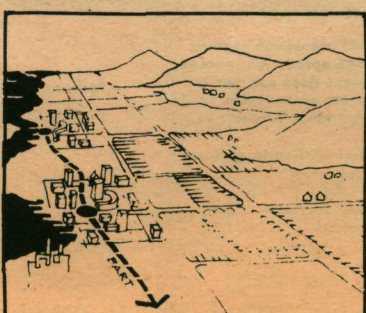


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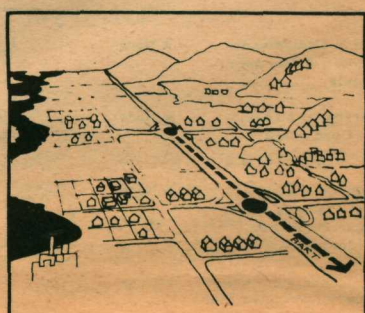


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## Environmental Impacts

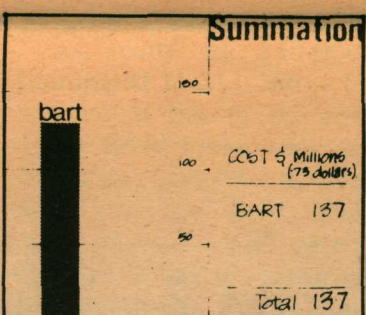


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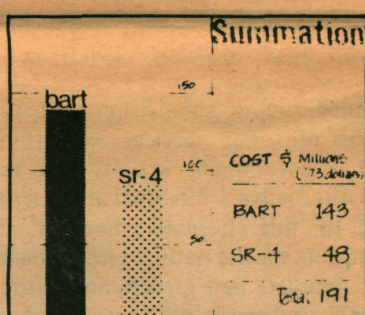


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## Costs



1



4

The Consultant's opinion is a useful starting point for the forthcoming selection process. Our main conclusions after conducting the comparison described in this report are as follows:

Although patronage is about the same for each alternative, more people will be living in the corridor by 1990 with Alternative 4. Because Alternative 1 will encourage clustered growth which is easier to serve by public transportation than spread development, it can serve a higher percentage of people who will want to ride transit in the future. Also, Alternative 1 serves a greater variety of trips, especially those commuting to new jobs within and around downtown areas.

Alternative 4 will involve relocation of about five times the number of houses and about three times the number of commercial properties as Alternative 1. With Alternative 1, low-income families will be affected by increased land values and rents downtown. Whereas, Alternative 4 will tend to accelerate downtown deterioration and thus increase the supply of low-cost housing units. Noise impacts and loss of privacy to views are about the same for each alternative.

Alternative 1 increases the opportunity and attractiveness for public and private expenditures in existing built-up areas, and can therefore encourage the kind of concentrated growth BART is best suited to serve. Much of the development associated with Alternative 4 will take place south and east of SR-4 in the form of conventional subdivisions, greatly increasing potential use of automobiles within the corridor.

The direct impacts of the BART Line and support facilities are moderate and about comparable for both alternatives. While Alternative 1 represents a conservation plan, Alternative 4 implies growth inducing impacts which will adversely affect the natural environment. Also, the downtown alternative should help to reduce potential use of automobiles and the attendant air pollution problems.

The cost of constructing the BART facilities are approximately the same for each alternative. However, Alternative 4 involves a direct cost increase of \$42-48 million for construction of SR-4. The indirect costs (i.e., tax increases) will be greater for Alternative 4 than Alternative 1 because of cost increases associated with spread growth.

# WHAT ARE THE NEXT STEPS?

## PAX will compare the favored BART extension with the non-extension option

Impacts of the favored BART extension can only be satisfactorily defined through preparation of a conceptual design for the adopted extension and by a fuller description of the coordinated action program to accompany BART construction.

The non-extension option is essentially the picture of the area portrayed in the beginning of this report — the picture of an area continuing to experience some new growth into rural lands while older communities decline.

Without a BART extension, regional transportation in the corridor will consist of a widened SR-4 and the BART bus system proposed by the BART Express Bus Program. The bus system BART expects to initiate has a capability to carry 1,550 persons per day. By 1990, if the system were upgraded (based on interpretation of RTTP tests and results), 10-13,000 people could be served on an average weekday, roughly two-thirds/three-fourths the estimated BART rapid transit patronage. With fewer likely public transportation riders, and if area growth continues, traffic congestion on highways in the corridor will be severe.

During the remainder of the PAX project, the favored BART extension alternative and non-extension option will be further developed and evaluated. This comparison will be included in an Envi-

ronmental Impact evaluation and will provide the basis for answering the question of whether or not BART should be extended.

## BART extension also depends on whether or not coordinated action program commitments can be made

While the transportation service characteristics are largely a matter of how the extension is designed and located, the growth-shaping potential of BART depends substantially on coordinated governmental actions with BART. It appears probable that, without a firm commitment to a coordinated action program, a pattern of growth is likely that would be difficult for BART to serve, and the overall effect of BART on the area's future could be less desirable than the non-extension option.

## Completing the PAX project

The last portion of the PAX project involves these major tasks:

- Developing the planning and conceptual design of the adopted alternative.
- Preparing an Environmental Impact evaluation that compares the adopted alternative and non-extension option.
- Considering options for financing and implementing the adopted alternative. The options necessarily will be considered by BARTD as part of a study of alternatives for financing and implementing expansion of the regional

BART system.

- Reviewing the findings of these analyses with the Advisory Committees, the Board of Control, and other project participants. Holding another public hearing to obtain opinions regarding the findings.
- Preparing a Final Report.

The draft Final Report will be reviewed by PAX project participants, MTC, BART, the State Department of Transportation, UMTA, and other agencies concerned with Bay Area regional transportation improvements. Comments and suggestions will be incorporated in a Final Report produced at the end of the PAX project.

If a recommendation to extend BART in the Pittsburg-Antioch corridor is made in the Final Report, additional steps can then be taken.

## Including a Pittsburg-Antioch Extension in the Regional Transportation Plan

The recommendations of PAX and some thirty other transportation studies in the nine-county Bay Area will be considered by MTC for incorporating into the Regional Transportation Plan.

Considerations will include how a Pittsburg-Antioch BART extension should connect to other regional and local transportation elements (particularly local feeder buses), where the PAX project stands on the list of regional

transportation priorities and how the project can be financed and implemented. BART has plans to initiate bus service in 1975.

The important last step in this process would be to negotiate the interagency agreements needed for implementing the extension and the coordinated program of government actions associated with it. These negotiations include: securing local, state, or federal transportation funding; securing funding and defining programs for redevelopment and the provision of community facilities related to BART; coordinating public capital improvements and social service programs; and making the necessary modifications to laws controlling land use.

## Finally, the project's value must be decided upon by the community and its representatives

In responding to future demand for transportation in central and eastern Contra Costa County, objective information is vital in the decision-making process. It is hoped that this summary report will be carefully analyzed by its readers, and their conclusions channeled to the many people who have worked on this project.

You are encouraged to take the time necessary to understand what a Pittsburg-Antioch BART extension would be like, and — based on this understanding — to help determine whether it should be built.